

WORKING DRAFT

General

Name

Kappler Responder® Total Encapsulating Level B Suit (Liquid Protective)

ID# 61



Technology

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Stock Number

41570 (front entry)
41571 (rear entry)

Protection Type

Level B, Percutaneous

Equipment Category

Level B, fully encapsulating, liquid protective, and expanded back

Availability

In stock

Current User(s)

Fire departments, HAZMAT response teams, and law enforcement

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kapper.com

Manufacturer Type

Domestic

Developer

Kappler Protective Apparel and Fabrics
70 Grimes Drive
Guntersville, AL 35976

Source

www.kappler.com

Certification

None

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

HD, GB, GD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not applicable

**Toxic Industrial Materials
(TIMs) Protected Against**

Contact Kappler for permeation guides

Duration of Protection

Contact Kappler for permeation guides

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Recommended Use(s)

Emergency HAZMAT teams, chemical handling, chemical warfare protection and when protection is needed against potential flash fire and/or NFPA certified garments are required

Physical Parameters

Sizes Available

S, M, L, XL, 2X, and 3X

Weight

Average packaging weight is 9 lb

Package Size and Volume

Not specified

Power Requirements

Not applicable

Material Type

Limited-use patented fabric consisting of multiple barrier films laminated to both sides of a tough substrate material

Construction Type

Taped seam—seam produced when a sewn seam is covered with a strip of compatible material. The strip is attached by heat-sealing as with film laminated materials.

Color

Blue

Logistical Parameters

Ease of Use

Some instruction required

Consumables

Not applicable

Maintenance Requirements

Suits should be stored in a cool dry area away from direct sunlight. Level A garments should have a visual test and be pressure tested according to the ASTM F1052 Air Pressure Test Method upon arrival from manufacture, annually and/or after each use, and a quick re-inspection before each use.

Shelf Life

Under proper storage conditions, there is no evidence to indicate that the System CPF[®] film composite fabrics lose their protective characteristics or physical properties over time. This conclusion is based on the comparative testing of “aged” and new Responder[®] fabric. Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data currently available. Based on the physical condition of the suit, it is recommended that downgrading suits to “training use only” be considered when they no longer pass the visual inspection and/or pressure test.

Transportability

Not applicable

Operational Limitations

There are uses and chemicals for which these garments are unsuitable. It is the responsibility of the user to review available data and verify that the garment is appropriate for the intended use and meets all specified government and industry standards.

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Environmental Conditions

Protective clothing is used under a variety of conditions. Garments can be exposed to a range of ambient temperatures as well as variations in the temperatures of the challenge chemical. The temperature service range for Responder and CPF 1–4 fabrics was established by performing tests at high and low temperatures. The high temperature was established by ASTM D751, “Test Methods for Coated Fabrics,” using the high temperature blocking test. In this test, the sample fabric material is subjected to the predetermined temperature for a period of time while the fabric is placed in contact with itself. The test was run at 200 °F (93 °C) and the fabrics were considered nonblocking at that temperature. The low temperature was established by ASTM D 2136, “Standard Test Method for Coated Fabrics—Low Temperature Bend Test.” This test subjects the fabric material to a predetermined low temperature for a period of time while the material is flex in a 60 ° bend. The sample is then examined visually for signs of cracking or other damage. The test was run at -85 °F (-65 °C) and the fabrics showed no signs of damage.

Unit Cost

Contact customer service for pricing

Maintenance Cost

Product is designed for limited use

Warranty

It is the responsibility of the user to select suits which are appropriate for each intended use and which meet all health standards. Kappler is available for consultation on any proposed use. Purchaser and all suit users shall promptly notify Kappler of any claim, whether based on contract, negligence, strict liability or otherwise. The sole and exclusive remedy of the purchaser and all users and the limit of liability of Kappler for any and all losses, injuries or damages resulting from use of a Kappler product shall be the refund of the purchase price or the replacement or repair of product found to be defective within 90 d after the product is delivered. In no event shall Kappler be liable for any special, incidental or consequential damages, whether in contract or in tort, arising out of any warranties, representations, instructions or defects from any cause in connection with the Kappler products, or the sale thereof. The purchaser and the users are deemed to have accepted the terms of this limitation of warranty and liability, which terms may not be varied by any verbal or written agreement. Purchaser and all users are responsible for inspection and proper care of this product as described in this manual and are responsible for all loss or damage from use or handling which results from conditions beyond the control of the manufacturer.

Don/Doff Information

See Level B instruction manual for instructions on donning and doffing

Use/Reuse

See Level B instruction manual for suggestions on decontamination

Launderability

See Level B instruction manual for suggestions on decontamination

Accessories

Additional accessories that may be purchased include chemtape, kooljacket, Tingley HAZMAT boot, and decon shower

Special Requirements

Training Requirements

Some instruction required

Training Available

Level B instruction manual, training video, and Suit Smart CD

Manuals Available

Level B instruction manual

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Surveillance Testing Requirements

Visual inspection and in the case of Level A garments, pressure testing according to ASTM F1052 upon receipt from manufacturer, after each use and/or annually, and before reuse

Support Equipment

Appropriate respiratory equipment

Testing Information

See permeation guides

Applicable Regulations

OSHA 1910.132 and OSHA 1910.120

Health Hazards

Not applicable

Communications Interface Capability

Not applicable

EOD Compatibility

Not applicable

WORKING DRAFT

General

Name
ID# 62

Kappler Responder® CSM OSHA Level A



Technology

Kappler/Grommet's Level A Responder CSM is a totally encapsulating suit with a large-view 40 mil PVC face shield with a 5 mil Teflon overlay, front entry, expanded back (to accommodate self-contained breathing apparatus (SCBA) and rebreathers), two exhaust valves, 48 in gas-tight PVC zipper, triple storm flap, attached sock boots with boot flap, replaceable MILSPEC butyl gloves, and double-sealed seams. Impermeable. A multi-layer extrusion laminated on one side to a polypropylene nonwoven substrate with another multi-layer film extrusion laminated to the opposite side. Material offers very little thermal protection to the user. Estimated temperature service range for material and seams: -85 °F to 200 °F.

Stock Number

42583 (Level A)

Protection Type

Level A, Percutaneous

Equipment Category

Level A, suit

Availability

June 1994—Initial entry into U.S. Army, DoD units, COE contractors, and Chemical Surety Labs

Current User(s)

U.S. Army Technical Escort Unit
POC: Mr. Sheldon Orr
410-436-8532 (Tel)
Aberdeen Proving Ground, MD 21010-5423.
1ST Ten RAID Teams and USMC CRIBF, MARCORSYSCOM,
POC: Adam Becker
703-784-5898 (Tel)
Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer

Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer Type

Domestic

Developer

GEOMET Technologies, Inc., and Kappler Safety Group

Source

www.kappler.com
www.nbcprotect.com

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Certification

Test data on the material (e.g., ASTM and TIMs) available from both the manufacturer and co-developer

Operational Parameters

Chemical Warfare (CW) Agents Protected Against

All classical CW agents including HN1, HN2, and HN3

Biological Warfare (BW) Agents Protected Against

Deductive reasoning strongly supports the use of these garments to protect against BW agents in powder form. No aerosol testing has been performed.

Toxic Industrial Materials (TIMs) Protected Against

Material tested for permeation per ASTM F739 against 200 chemicals, liquids, and gases.

Duration of Protection

Varies depending upon the type of hazard

Recommended Use(s)

Not specified

Physical Parameters

Sizes Available

S, M, L, XL, 2XL, and 3XL. A size smaller than small (XS) can be manufactured for a minimum quantity of 12 units.

Weight

Level A—6 lb

Package Size and Volume

Level A—45.9 in³ in shipping container (box)

Power Requirements

Not applicable

Material Type

Impermeable. A multi-layer extrusion laminated on one side to a polypropylene nonwoven substrate with another multi-layer film extrusion laminated to the opposite side.

Construction Type

Sealed seams

Color

Tan outside. White inside. Tan seam tape inside and outside.

Logistical Parameters

Ease of Use

Suit does not restrict mobility. Wearers can bend, twist, and turn without friction. The clothing is compatible with most SCBAs and with rebreathers, especially the Biomarine BioPak 240.

Consumables

Antifog is necessary to keep the face shield from fogging due to the wearer's warm exhalation

Maintenance Requirements

Visual inspection and pressure testing are required before and after use, of every six months when in storage

Shelf Life

Not specified

Transportability

Not applicable

Operational Limitations

Temperature service range: -85 °F to 200 °F

Environmental Conditions

Ambient weather conditions should have little affect on suit material. Estimated temperature service range for material and seams: -85 °F to 200 °F.

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Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	Standard warranty is for a period of 90 d; however, extended warranties are negotiable from purchases made by co-developer GEOMET Technologies, Inc.
Don/Doff Information	With instruction manual
Use/Reuse	The physical condition and whether the suit passes the pressure test must be determined before considering reuse
Laundryability	Decontamination procedures should be initiated and supervised by a qualified safety professional as quickly as possible on a suit that has been exposed to toxic chemical substances. Responder CSM suits are for limited-use and as such, are not designed for multiple washing and decontamination.
Accessories	35 mil butyl gloves, a Sanarex carrying bag for Level A, and a plastic, resealable storage bag for Level B coveralls
<u>Special Requirements</u>	
Training Requirements	8 h
Training Available	Training video, Suit Smart CD
Manuals Available	One instruction manual is included with each suit shipped
Surveillance Testing Requirements	Visual inspection and pressure testing are required before and after use, of every 6 mo when in storage
Support Equipment	One pressure test kit and an external air source
Testing Information	Chemical agent testing pertaining to the preproduction fabric roll and post-production suit lot. Test data on the material (e.g., ASTM and TIMs) available from both the manufacturer and co-developer.
Applicable Regulations	None. However, each individual Government user has developed their own internal guidance regarding the storage and use of these garments.
Health Hazards	There is no potential health hazard associated with the possession, use, or storage of Responder CSM limited-use suits
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

WORKING DRAFT

General

Name

ID# 63

Kappler Responder® CSM OSHA Level B



Technology

Kappler/GEOMET's Level B Responder CSM is a zipper-front coverall with an attached hood, jam fit glove system with MILSPEC butyl gloves, attached sock boots with splash guards, and double-sealed seams. The extended double storm flap works with the hood to accommodate a respirator. Impermeable. A multi-layer extrusion laminated on one side to a polypropylene nonwoven substrate with another multi-layer film extrusion laminated to the opposite side. Material offers very little thermal protection to the user. Estimated temperature service range for material and seams: -85 °F to 200 °F.

Stock Number

42489 (Level B)

Protection Type

Level B/C, Percutaneous

Equipment Category

Level B/C, suit

Availability

June 1994—Initial entry into U.S. Army, DoD units, COE contractors, and Chemical Surety Labs

Current User(s)

U.S. Army Technical Escort Unit
POC: Mr. Sheldon Orr
410-436-8532 (Tel)
Aberdeen Proving Ground, MD 21010-5423.
1ST Ten RAID Teams and USMC CRIBF, MARCORSYSCOM
POC: Adam Becker
703-784-5898 (Tel)
Kappler Safety Group
70 Grimes Drive
Guntersville, AL 35976
www.kappler.com
POC: Kendra Barclay
256-505-4000 (Tel)
256-582-1163 (Fax)
email: kbarclay@kappler.com

Manufacturer

Manufacturer Type Developer

Domestic
GEOMET Technologies, Inc., and Kappler Safety Group

Source

www.kappler.com
www.nbcprotect.com

Certification

Test data on the material (e.g., ASTM and TIMs) available from both the manufacturer and co-developer

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Operational Parameters

Chemical Warfare (CW) Agents Protected Against

All classical CW agents including HN1, HN2, and HN3

Biological Warfare (BW) Agents Protected Against

Deductive reasoning strongly supports the use of these garments to protect against BW agents in powder form. No aerosol testing has been performed.

Toxic Industrial Materials (TIMs) Protected Against

Material tested for permeation per ASTM F739 against 200 chemicals, liquids, and gases

Duration of Protection

Varies depending upon the type of hazard

Recommended Use(s)

Not specified

Physical Parameters

Sizes Available

S, M, L, XL, 2XL, and 3XL. A size smaller than small (XS) can be manufactured for a minimum quantity of 12 units.

Weight

Level B—4 lb

Package Size and Volume

Level B—34.5 in³ in shipping container (box)

Power Requirements

Not applicable

Material Type

A multi-layer extrusion laminated on one side to a polypropylene non-woven substrate with another multi-layer film extrusion laminated to the opposite side

Construction Type

Sealed seams

Color

Tan outside. White inside. Tan seam tape inside and outside.

Logistical Parameters

Ease of Use

Suit does not restrict mobility. Wearers can bend, twist, and turn without friction. The clothing is compatible with most SCBAs and with rebreathers, especially the Biomarine BioPak 240.

Consumables

Antifog is necessary to keep the face shield from fogging due to the wearer's warm exhalation

Maintenance Requirements

Visual inspection and pressure testing are required before and after use, or every six months when in storage

Shelf Life

Not specified

Transportability

Not applicable

Operational Limitations

Temperature service range: -85 °F to 200 °F

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Environmental Conditions	Ambient weather conditions should have little affect on suit material. Estimated temperature service range for material and seams: -85 °F to 200 °F.
Unit Cost	Contact customer service for pricing
Maintenance Cost	Product is designed for limited use
Warranty	Standard warranty is for a period of 90 d; however, extended warranties are negotiable from purchases made by co-developer GEOMET Technologies, Inc.
Don/Doff Information	With instruction manual
Use/Reuse	The physical condition and whether the suit passes the pressure test must be determined before considering reuse
Launderability	Decontamination procedures should be initiated and supervised by a qualified safety professional as quickly as possible on a suit that has been exposed to toxic chemical substances. Responder CSM suits are for limited-use and as such, are not designed for multiple washing and decontamination.
Accessories	35 mil butyl gloves, a Sanarex carrying bag for Level A, and a plastic, resealable storage bag for Level B coveralls
<u>Special Requirements</u>	
Training Requirements	8 h
Training Available	Training video, Suit Smart CD
Manuals Available	One instruction manual is included with each suit shipped
Surveillance Testing Requirements	Visual inspection and pressure testing are required before and after use, or every 6 mo when in storage
Support Equipment	One pressure test kit and an external air source
Testing Information	Chemical agent testing pertaining to the preproduction fabric roll and post-production suit lot. Test data on the material (e.g., ASTM and TIMs) available from both the manufacturer and co-developer.
Applicable Regulations	None. However, each individual Government user has developed their own internal guidance regarding the storage and use of these garments.
Health Hazards	There is no potential health hazard associated with the possession, use, or storage of Responder CSM limited-use suits
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

WORKING DRAFT

General

Name

ID# 64

Lakeland Tychem® 10000 NFPA Certified Level A Ensemble



Technology

Inner garment is selectively permeable, outer garment is aluminized and made for chemical flash fire protection

Stock Number

12645 (front entry)

12655 (rear entry)

Protection Type

Level A, Percutaneous, respiratory (gas-tight suit), and flash fire

Equipment Category

Level A, ensemble, with aluminized fiberglass overcover

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.

202 Pride Lane, SW

Decatur, AL 35602

Internet: www.lakeland.com

POC: Carl Brown (Technical Product Specialist)

POC: Steve McCully (Product Manager)

800-645-9291 (Tel)

256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

NFPA

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial Materials
(TIMs) Protected Against**

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

WORKING DRAFT

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available

S through 5X

Weight

30 lb

Package Size and Volume

20 in L x 16 in W x 16 in H

Power Requirements

None

Material Type

Inner garment is selectively permeable, outer garment is aluminized and made for chemical flash fire protection

Construction Type

Seam sewn and the heat-sealed with tape

Color

Outer garment is silver and inner is lime-green

Logistical Parameters

Ease of Use

Garment passed all NFPA requirements for mobility and flexibility

Consumables

None—gloves are replaceable if needed

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation other than original bag included with suit

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not specified

Warranty

90 d

Don/DoFF Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

3-layer glove system, a combination of Viton (middle), North Silvershield (inner), and Kevlar (outer), storage bag, and Bata HAZMAT boots included with each ensemble

Special Requirements

Training Requirements

Not specified

Not specified

Training Available

Available through regional sales representation

Manuals Available

User manual and permeation guide available

Surveillance Testing Requirements

Visually inspect prior to use for holes or tears

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Support Equipment	Level A pressure test kit
Testing Information	ASTM F1052
Applicable Regulations	NFPA 1991–2000 edition
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

WORKING DRAFT

General

Name
ID# 65

Lakeland Tychem® 10000 Level A Ensemble



Technology

Selectively permeable

Stock Number

11645 (front entry)
11655 (rear entry)

Protection Type

Level A, Percutaneous, and respiratory (gas-tight suit)

Equipment Category

Level A, ensemble, with aluminized PBI/Kevlar overcover

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

NFPA 1991-2000 Edition, ASTM F1052

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

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Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available

S through 5X

Weight

30 lb

Package Size and Volume

Not specified

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

Lime-green

Logistical Parameters

Ease of Use

Not specified

Consumables

None—gloves are replaceable if needed

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation other than original bag included with suit

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/DoFF Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

3-layer glove combination of Viton, North Silvershield, and outer Kevlar knit gloves, storage bag, and Bata HAZMAT boots

Special Requirements

Training Requirements

Not specified

Training Available

Available through regional sales representation

Manuals Available

User manual is available, permeation guide is available

Surveillance Testing Requirements

Visually inspect prior to use for holes or tears

Support Equipment Testing Information

Level A pressure test kit
ASTM F1052

WORKING DRAFT

Applicable Regulations	NFPA 1991–2000 edition
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

WORKING DRAFT

General

Name

ID# 66

Lakeland Tychem® 10000 Economy Level A Encapsulated Suit



Technology

Selectively permeable

Stock Number

10620 (front entry) Tychem® 10000

10630 (rear entry) Tychem® 10000

TK620 Tychem® TK

TK630 Tychem® TK

Protection Type

Level A, Percutaneous, and respiratory

Equipment Category

Level A, fully encapsulating, and flat back

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.

202 Pride Lane, SW

Decatur, AL 35602

Internet: www.lakeland.com

POC: Carl Brown (Technical Product Specialist)

POC: Steve McCully (Product Manager)

800-645-9291 (Tel)

256-350-3011 (Fax)

Manufacturer Type

Domestic manufacturer

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

OSHA Level A

Operational Parameters

Chemical Warfare (CW)

Agents Protected Against

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW)

Agents Protected Against

Protects against all biological toxins and pathogens

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

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Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available

S through 5X

Weight

10 lb

Package Size and Volume

22 in L x 16 in W x 10.5 in H

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

Lime-green

Logistical Parameters

Ease of Use

Garment poses no major mobility or flexibility problems from wearer compared to other Level A CPC

Consumables

None—gloves are replaceable if needed

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation other than original bag included with suit

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/Doff Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

Butyl gloves, sock boots with boot flaps, and storage bag included

Special Requirements

Training Requirements

Not specified

Training Available

Available through regional sales representation

Manuals Available

User manual and permeation guide available

Surveillance Testing Requirements

Visually inspect prior to use for holes or tears

Support Equipment

Level A pressure test kit

WORKING DRAFT

Testing Information	ASTM F1052
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

WORKING DRAFT

General

Name
ID# 67

Lakeland Tychem® 10000 Economy Level A Encapsulated Suit



Technology

Selectively permeable

Stock Number

10660 (front entry) Tychem® 10000
10670 (rear entry) Tychem® 10000
TK660 Tychem® TK
TK670 Tychem® TK

Protection Type

Level A, Percutaneous, and respiratory

Equipment Category

Level A, fully encapsulating

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic manufacturer

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

OSHA Level A

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial Materials
(TIMs) Protected Against**

Excellent protection against a wide variety of TIMs

WORKING DRAFT

Duration of Protection

Minimum of 8 h

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters**Sizes Available**

S through 5X

Weight

10 lb

Package Size and Volume

22 in L x 16 in W x 10.5 in H

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

Lime-green

Logistical Parameters**Ease of Use**

Garment poses no major mobility or flexibility problems from wearer compared to other Level A CPC

Consumables

None—gloves are replaceable if needed

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation other than original bag included with suit

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/Doff Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

Butyl gloves, sock boots with boot flaps, and storage bag included

Special Requirements**Training Requirements**

Not specified

Training Available

Available through regional sales representation

Manuals Available

User manual and permeation guide available

Surveillance Testing Requirements

Visually inspect prior to use for holes or tears

Support Equipment

Level A pressure test kit

WORKING DRAFT

Testing Information	ASTM F1052
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

WORKING DRAFT

General

Name
ID# 68

Lakeland Tychem® 10000 Level A Suit



Technology

Selectively permeable

Stock Number

10640 (front entry) Tychem® 10000
10650 (rear entry) Tychem® 10000
TK640 Tychem® TK
TK650 Tychem® TK

Protection Type

Level A, Percutaneous, and respiratory (gas-tight suit)

Equipment Category

Level A, encapsulated, and gas-tight suit deluxe

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

OSHA Level A

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Protects against all biological toxins and pathogens

**Toxic Industrial Materials
(TIMs) Protected Against**

Excellent protection against a wide variety of TIMs

Duration of Protection

Minimum of 8 h

WORKING DRAFT

Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments
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Physical Parameters

Sizes Available	S through 5X
Weight	10 lb
Package Size and Volume	22 in L x 16 in W x 10.5 in H
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	Lime-green

Logistical Parameters

Ease of Use	Garment poses no major mobility or flexibility problems from wearer compared to other Level A CPC
Consumables	None—gloves are replaceable if needed
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation other than original bag included with suit
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Operational temperature range of Tychem 10000 material is -25 °F to 225 °F
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/DoFF Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	3-layer glove system (butyl inner, silvershield middle, Kevlar outer), and storage bag included

Special Requirements

Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	Level A pressure test kit

WORKING DRAFT

Testing Information	ASTM F1052
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

WORKING DRAFT

General

Name
ID# 69

Lakeland Tychem® 9400 Level B Encapsulated Suit



Technology

Selectively permeable

Stock Number

94450 (rear entry) Tychem® 9400
BR450 Tychem® BR

Protection Type

Level B, Percutaneous, and respiratory

Equipment Category

Level B, encapsulated suit, expanded back, 48" zipper, double storm flap with Velcro, and sock boots with boot flaps

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L)

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

A broad range of TIMs. Contact Lakeland for further information.

WORKING DRAFT

Duration of Protection Breakthrough time at minimum of 8 h, except Ammonia at 45 min, Dichloromethane at 391 min, and Methanol at 150 min

Recommended Use(s) Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available S through 5X

Weight 13 lb per case and three in a case

Package Size and Volume Not specified

Power Requirements None

Material Type Garment is selectively permeable

Construction Type Seam sewn and the heat-sealed with tape

Color School bus yellow

Logistical Parameters

Ease of Use Garment poses no major mobility or flexibility problems from wearer compared to other Level B CPC

Consumables None

Maintenance Requirements Not specified

Shelf Life After 5 yr, recommended to use only for training

Transportability No support equipment required for transportation

Operational Limitations Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions Designed to be worn in common outdoor conditions

Unit Cost Not applicable—cost to be determined by distributors

Maintenance Cost Not applicable

Warranty 90 d

Don/Doff Information Not specified

Use/Reuse Limited use

Launderability Suits are not launderable

Accessories None

Special Requirements

Training Requirements None

Training Available Available through regional sales representation

Manuals Available User manual and permeation guide available

WORKING DRAFT

Surveillance Testing Requirements

Visually inspect prior to use for holes or tears

Support Equipment

None

Testing Information

Not specified

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Option is available

EOD Compatibility

Yes

WORKING DRAFT

General

Name

Lakeland Tychem® 9400 Level B Encapsulated Suit

ID# 70



Technology

Selectively permeable

Stock Number

94400 (rear entry) Tychem® 9400
BR400 Tychem® BR

Protection Type

Level B, Percutaneous, and respiratory

Equipment Category

Level B, encapsulated suit, flat back, 48" zipper, storm flap, and sock boots with boot flaps

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L)

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

A broad range of TIMs. Contact Lakeland for further information.

WORKING DRAFT

Duration of Protection	Breakthrough time at minimum of 8 h, except Ammonia at 45 min, Dichloromethane at 391 min, and Methanol at 150 min
Recommended Use(s)	Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available	S through 5X
Weight	13 lb per case and three in a case
Package Size and Volume	Not specified
Power Requirements	None
Material Type	Garment is selectively permeable
Construction Type	Seam sewn and the heat-sealed with tape
Color	School bus yellow

Logistical Parameters

Ease of Use	Garment poses no major mobility or flexibility problems from wearer compared to other Level B CPC
Consumables	None
Maintenance Requirements	Not specified
Shelf Life	After 5 yr, recommended to use only for training
Transportability	No support equipment required for transportation
Operational Limitations	Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.
Environmental Conditions	Designed to be worn in common outdoor conditions
Unit Cost	Not applicable—cost to be determined by distributors
Maintenance Cost	Not applicable
Warranty	90 d
Don/Doff Information	Not specified
Use/Reuse	Limited use
Launderability	Suits are not launderable
Accessories	None

Special Requirements

Training Requirements	None
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WORKING DRAFT

Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

WORKING DRAFT

General

Name

Lakeland Tychem® SL Level B Encapsulated Suit

ID# 71



Technology

Selectively permeable

Stock Number

72400 (rear entry)

Protection Type

Level B, Percutaneous, and respiratory

Equipment Category

Level B, encapsulated suit, flat back, 48" zipper, storm flap, elastic wrists, and sock boots with boot flaps

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L).
Questions call Lakeland Customer Service at 800-645-9291.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

A broad range of liquid chemicals. Questions call Lakeland Customer Service at 800-645-9291.

WORKING DRAFT

Duration of Protection

Fabric test data: Average breakthrough time
VX: Greater than 12 h at 10 g/m²
GB, and L: Greater than 6 h at 10 g/m²
D: Greater than 3 h at 10 g/m²
Questions call Lakeland Customer Service at 800-645-9291

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available

S through 5X

Weight

7 lb per case and three in a case

Package Size and Volume

Not specified

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

White

Logistical Parameters

Ease of Use

Garment poses no major mobility or flexibility problems from wearer compared to other Level B CPC

Consumables

None

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Designed to be worn in common outdoor conditions

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/DoFF Information

Not specified

Use/Reuse

Limited use

Laundryability

Suits are not launderable

Accessories

None

Special Requirements

WORKING DRAFT

Training Requirements	Not specified
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

WORKING DRAFT

General

Name

Lakeland Tychem® 10000 Level B Encapsulated Suit

ID# 72



Technology

Selectively permeable

Stock Number

10440 (front entry) Tychem® 10000
10450 (rear entry) Tychem® 10000
TK440 Tychem® TK
TK450 Tychem® TK

Protection Type

Level B, Percutaneous, and respiratory

Equipment Category

Level B, encapsulated suit

Availability

4 wk to 5 wk ARO

Current User(s)

Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry

Manufacturer

Lakeland Industries, Inc.
202 Pride Lane, SW
Decatur, AL 35602
Internet: www.lakeland.com
POC: Carl Brown (Technical Product Specialist)
POC: Steve McCully (Product Manager)
800-645-9291 (Tel)
256-350-3011 (Fax)

Manufacturer Type

Domestic

Developer

Lakeland Industries

Source

www.lakeland.com

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

GA, GB, GD, HD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Not specified

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

A broad range of TIMs. Contact Lakeland for further information.

Duration of Protection

Breakthrough time at minimum of 8 h, except Ammonia at 45 min, Dichloromethane at 391 min, and Methanol at 150 min

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters

Sizes Available

S through 5X

Weight

15 lb

Package Size and Volume

22 in L x 16 in W x 10.5 in H

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

Lime-green

Logistical Parameters

Ease of Use

Garment poses no major mobility of flexibility problems from wearer compared to other Level B CPC

Consumables

None

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/Doff Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

None


WORKING DRAFT

Special Requirements

Training Requirements	None
Training Available	Available through regional sales representation
Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

WORKING DRAFT

General

Name	<i>Lakeland Tychem® 10000 Level B Coverall (Fully Encapsulated)</i>
ID# 73	
Technology	Selectively permeable
Stock Number	10400 Tychem® 10000 TK400 Tychem® TK
Protection Type	Level B, Percutaneous, and respiratory
Equipment Category	Level B, coverall (fully encapsulated flat back suit, PVC visor, 48" rear entry zipper with storm flap, and sock boot and boot flaps)
Availability	4 wk to 5 wk ARO
Current User(s)	Government organizations, municipal HAZMAT teams, fire departments, international HAZMAT/military organizations, and industry
Manufacturer	Lakeland Industries, Inc. 202 Pride Lane, SW Decatur, AL 35602 Internet: www.lakeland.com POC: Carl Brown (Technical Product Specialist) POC: Steve McCully (Product Manager) 800-645-9291 (Tel) 256-350-3011 (Fax)
Manufacturer Type	Domestic
Developer	Lakeland Industries
Source	www.lakeland.com
Certification	Not applicable

Operational Parameters

Chemical Warfare (CW) Agents Protected Against	Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.
Biological Warfare (BW) Agents Protected Against	Protects against all biological toxins and pathogens
Toxic Industrial Materials (TIMs) Protected Against	Excellent protection against a wide variety of TIMs

WORKING DRAFT

Duration of Protection

Minimum of 8 h

Recommended Use(s)

Tactical operations, HAZMAT teams, chemical/biological testing, training, and warfare environments

Physical Parameters**Sizes Available**

S through 5X

Weight

9 lb per case and three in a case

Package Size and Volume

Not specified

Power Requirements

None

Material Type

Garment is selectively permeable

Construction Type

Seam sewn and the heat-sealed with tape

Color

Lime-green

Logistical Parameters**Ease of Use**

Garment poses no major mobility or flexibility problems from wearer compared to other Level B CPC

Consumables

None

Maintenance Requirements

Not specified

Shelf Life

After 5 yr, recommended to use only for training

Transportability

No support equipment required for transportation

Operational Limitations

Off the shelf cooling systems are available. Operational limitations to be decided by safety manager.

Environmental Conditions

Operational temperature range of Tychem 10000 material is -25 °F to 225 °F

Unit Cost

Not applicable—cost to be determined by distributors

Maintenance Cost

Not applicable

Warranty

90 d

Don/Doff Information

Not specified

Use/Reuse

Limited use

Launderability

Suits are not launderable

Accessories

None

Special Requirements**Training Requirements**

Not specified

Training Available

Available through regional sales representation

WORKING DRAFT

Manuals Available	User manual and permeation guide available
Surveillance Testing Requirements	Visually inspect prior to use for holes or tears
Support Equipment	None
Testing Information	Not specified
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Option is available
EOD Compatibility	Yes

WORKING DRAFT

General

Name

C-Cover S-89 One Piece NBC Protective Overgarment

ID# 74



Technology

Thermoplastic film technology (advanced, co-extruded, multi-layer, thermoplastic films are converted into several different, patented disposable garment designs by special heat sealing technique). Body cover—50 μ thin, transparent polyethylene (PE) film. The PE has a polyamide (PA) barrier. Foot covers—made from nonwoven polypropylene (PP) fiber fabric reinforcements.

Stock Number

NATO Stock No: 8415 25 138 3938

Protection Type

Skin protection from Military NBC warfare agents

Equipment Category

Transparent body cover and foot covers with mask opening; disposable

Availability

Full production

Delivery: 60 d to 90 d after order

Current User(s)

NATO military Use—Sweden, Norway, and USA

Manufacturer

New Pac Safety AB

P.O. Box 174

S-566 23 Habo

Sweden

+46-36-411-39 (Tel)

+46-36-410-31 (Fax)

E-mail: info@newpac.se

Manufacturer Type

Foreign

Developer

New Pac Safety AB

Source

Sales: INDEF Services Intl.

14847 Lee Highway

Amissville, VA 20106-0089

540-937-7327 (Tel)

540-937-7328 (Fax)

indefsteve@msn.com

Certification

Meets NATO Military Standards for NBC Ensemble

Swedish Defense Lab Certification

Battelle Labs—Test GD and HD (July 27, 1990)

WORKING DRAFT

Operational Parameters

Chemical Warfare (CW) Agents Protected Against	All Military CW agents
Biological Warfare (BW) Agents Protected Against	All Military BW agents
Toxic Industrial Materials (TIMs) Protected Against	Detects a variety of TIMs
Duration of Protection	All garments equipped with PA barriers provide protection against all known CW agents for more than 24 h. Minimum 12 h against NATO standard challenge.
Recommended Use(s)	Tactical operations, CBW response teams, medical response teams, and decontamination teams: Designed for temporary and short term use by support personnel and to protect general population.

Physical Parameters

Sizes Available	One size fits all
Weight	1.1 lb
Package Size and Volume	Can be tightly rolled for compact storage
Power Requirements	Not applicable
Material Type	Body cover—50 μ thin, transparent polyethylene (PE) film. The PE has a polyamide (PA) barrier. Foot covers—made from nonwoven polypropylene (PP) fiber fabric reinforcements capable of withstanding at least 5 km of rough ground.
Construction Type	Reinforced sealed
Color	Transparent

Logistical Parameters

Ease of Use	Protection provided within less than 10 s of unexpected CW attack
Consumables	None
Maintenance Requirements	None—Suit is disposable
Shelf Life	10 yr
Transportability	Not specified
Operational Limitations	Not for use where exposure to open flame is possible. Concern of heat stress to wearer in high temperature/high humidity conditions.
Environmental Conditions	-30 °F to +140 °F. Maintains protection if wet.
Unit Cost	\$60/complete ensemble
Maintenance Cost	None—disposable

WORKING DRAFT

Warranty	Replacement if manufacturing flaw found upon initial use within 12 mo of purchase
Don/Doff Information	Less than 10 s. Ensemble is worn over clothing. Boot covers worn over boots. Can don without assistance.
Use/Reuse	24 h use minimum. Disposable after use.
Launderability	Disposable after use
Accessories	Not specified
<u>Special Requirements</u>	
Training Requirements	Not specified
Training Available	None required
Manuals Available	None required, video available
Surveillance Testing Requirements	Not specified
Support Equipment	Not specified
Testing Information	Meets NATO Standard Test Requirement for CB Ensemble
Applicable Regulations	Not specified
Health Hazards	Not specified
Communications Interface Capability	Not specified
EOD Compatibility	Yes

WORKING DRAFT

General

Name

C-Cover S/89N Body Cover

ID # 75

Picture Not Available

Technology

Thermoplastic film technology (advanced, co-extruded, multi-layer, thermoplastic films are converted into several different, patented disposable garment designs by special heat sealing technique). Body cover—50 µ thin, transparent polyethylene (PE) film. The PE has a polyamide (PA) barrier. Foot covers—made from nonwoven polypropylene (PP) fiber fabric reinforcements.

Stock Number

Not specified

Protection Type

Percutaneous

Equipment Category

Transparent body cover and foot covers. Similar to S/89 but has no mask opening and is shortened to allow breathing air to be pumped in from underneath up to the respirator.

Availability

Not specified

Current User(s)

Military and civilian use

Manufacturer

New Pac Safety AB
P.O. Box 174
S-566 23 Habo
Sweden
+46-36-411-39 (Tel)
+46-36-410-31 (Fax)
E-mail: info@newpac.se

Manufacturer Type

Foreign

Developer

New Pac Safety AB

Source

Sales: INDEF Services Intl.
14847 Lee Highway
Amissville, VA 20106-0089
540-937-7327 (Tel)
540-937-7328 (Fax)
indefsteve@msn.com

Certification

Not specified

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

NBC

**Biological Warfare (BW)
Agents Protected Against**

NBC

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Not specified

Duration of Protection

All garments equipped with PA barriers provide protection against all known CW agents for more than 24 h

Recommended Use(s)

Impermeable protective garments for military and civilian use

Physical Parameters

Sizes Available

Not applicable

Weight

Lightweight

Package Size and Volume

Can be tightly rolled for compact storage

Power Requirements

Not applicable

Material Type

Body cover—50 μ thin, transparent polyethylene (PE) film. The PE has a polyamide (PA) barrier. Foot covers-made from nonwoven polypropylene (PP) fiber fabric reinforcements capable of withstanding at least 5 km of rough ground.

Construction Type

Not specified

Color

Transparent

Logistical Parameters

Ease of Use

Protection provided within less than 10 s of unexpected CW attack

Consumables

None

Maintenance Requirements

Not specified

Shelf Life

Not specified

Transportability

Not applicable

Operational Limitations

Not specified

Environmental Conditions

Not specified

Unit Cost

Not specified

Maintenance Cost

Not specified

Warranty

Not specified

Don/DoFF Information

Less than 10 s

Use/Reuse

Disposable

Launderability

Not specified

Accessories

Not specified

WORKING DRAFT

Special Requirements

Training Requirements	Not specified
Training Available	Not specified
Manuals Available	Not specified
Surveillance Testing Requirements	Not specified
Support Equipment	Not specified
Testing Information	Not specified
Applicable Regulations	Not specified
Health Hazards	Not specified
Communications Interface Capability	Not specified
EOD Compatibility	Not specified

WORKING DRAFT

General

Name

C-Cover Dress S-97 NBC Protective Overgarment

ID # 76



Technology

Resistant barrier material known as EVAL, ISO standard for ethylene vinyl alcohol (EVOH). Thermoplastic film technology (advanced, co-extruded, multi-layer, thermoplastic films are converted into several different, patented disposable garment designs by special heat sealing technique). Trousers have integrated PP-reinforced foot covers and the C-Cover Dress has a PA barrier. The PE has a polyamide (PA) barrier.

Stock Number

NATO # 4230-17-110-0048

Protection Type

Skin protection from Military NBC warfare agents

Equipment Category

Two-piece suit with integrated hood, integrated reinforced foot covers, disposable

Availability

Full production. Delivery: 60 d to 90 d after order.

Current User(s)

NATO military use—Sweden, Denmark, Finland, Switzerland, Hungary, USA

Manufacturer

New Pac Safety AB
P.O. Box 174
S-566 23 Habo
Sweden
+46-36-411-39 (Tel)
+46-36-410-31 (Fax)
E-mail: info@newpac.se

Manufacturer Type

Private, Foreign

Developer

New Pac Safety, Sweden

Source

Sales: INDEF Services Intl
14847 Lee Highway
Amissville, VA 20106-0089
540-937-7327 (Tel)
540-937-7328 (Fax)
indefsteve@msn.com

Certification

Meets NATO Military Standards for NBC Ensemble
Swedish Defense Lab Certification

Operational Parameters

WORKING DRAFT

Chemical Warfare (CW) Agents Protected Against

All Military CW agents

Biological Warfare (BW) Agents Protected Against

All Military BW agents

Toxic Industrial Materials (TIMs) Protected Against

Most hazardous chemicals

Duration of Protection

All garments equipped with PA barriers provide protection against all known CW agents for more than 24 h. Minimum 12 h against NATO standard challenge.

Recommended Use(s)

Tactical operations, CBW response teams, medical response teams, and decontamination teams: Designed for temporary and short term use by support personnel and to protect general population.

Physical Parameters

Sizes Available

L and XL

Weight

2 ¾ lb

Package Size and Volume

11 in x 9.5 in x 3 in; 0.18 in cuff

Power Requirements

None

Material Type

Trousers have integrated PP-reinforced foot covers and the C-Cover Dress has a PA barrier. The PE has a polyamide (PA) barrier.

Construction Type

Jacket has an integrated hood with flexible ring ensuring snug fit around mask. The design has been carefully chosen for full scale, high production and guarantees best seal strength. Sleeves are sealed to the jacket with one common sleeve opening. The design of the trousers allows for two pairs to be sealed at a time. New Pac Safety AB owns patent rights. Special heat sealing technique.

Color

Forest green and military green

Logistical Parameters

Ease of Use

Simple don—no training required

Consumables

None—suit is disposable

Maintenance Requirements

None

Shelf Life

10 yr

Transportability

Not applicable

Operational Limitations

Not for use where exposure to open flame is possible. Concern of heat stress to wearer in high temperature/high humidity conditions.

Environmental Conditions

-30 °F to +140 °F. Maintains protection if wet.

Unit Cost

\$110/complete ensemble

Maintenance Cost

None

WORKING DRAFT

Warranty	Replacement if manufacturing flaw found upon initial use within 12 mo of purchase
Don/Doff Information	Ensemble is worn over clothing. Boot covers worn over boots and gloves over hands. Can don without assistance.
Use/Reuse	24 h use minimum. Disposable after use.
Launderability	No
Accessories	None

Special Requirements

Training Requirements	None
Training Available	None required
Manuals Available	None Required
Surveillance Testing Requirements	None
Support Equipment	None
Testing Information	Meets NATO Standard Test Requirement for CB Ensemble
Applicable Regulations	Not applicable
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Yes

WORKING DRAFT

General

Name

Saratoga HAMMER Suit

ID # 77



Technology

Permeable Saratoga carbon sphere sorptive technology. Two layer fabric system with shell of 100 % cotton and Saratoga permeable liner of activated carbon spheres on polyester jersey. Not FR (custom FR design available).

Stock Number

TS CO-1195C (2-piece suit)

Protection Type

Percutaneous

Equipment Category

Chemical protective overgarment, duty uniform

Availability

Fielded in 1998. Currently in production.

Current User(s)

U.S. Secret Service
Technical Security Division
1800 G Street NW
Washington, DC 20223
POC: Mr. David Cohen
202-395-9272

Manufacturer

Tex-Shield, Inc.
5206 Morrowick Rd
Charlotte, NC 28226
POC: Nona Fahl
704-341-3681 (Tel)
704-72341-3468 (Fax)

Manufacturer Type

International

Developer

U.S. Secret Service
Technical Security Division
1800 G Street NW
Washington, DC 20223
POC: Mr. David Cohen
202-395-9272

Source

Tex-Shield, Inc.

Certification

Provides protection from chemical warfare agents per MIL-C-29462. Tex-Shield is sole source for all material used in Saratoga HAMMER Suit.

WORKING DRAFT

Operational Parameters

Chemical Warfare (CW) Agents Protected Against	All classes of chemical warfare agents when used as directed with chemical warfare protective mask, gloves, and overboots or socks
Biological Warfare (BW) Agents Protected Against	Protects against biological warfare agents when used as directed with appropriate mask, gloves, and overboots or socks
Toxic Industrial Materials (TIMs) Protected Against	Not tested
Duration of Protection	Meets the requirements for protection from CW agents for up to six launderings, 45 d wear, 120 calendar days after removal from factory sealed bag or 24 h after contamination
Recommended Use(s)	Tactical, crisis management, all law enforcement, and first responders

Physical Parameters

Sizes Available	S/X-short, S/short, M/short, M/regular, M/long, L/regular, and L/long
Weight	Varies by size. Nominal weight < 5 lb suit.
Package Size and Volume	Coat and trouser packaged separately. Nominal 10 in x 6 in x 3 in vacuum sealed package size for each piece.
Power Requirements	None
Material Type	Two layer fabric system with shell of 100 % cotton and Saratoga permeable liner of activated carbon spheres on polyester jersey. Not fire resistant (FR) (custom FR design available).
Construction Type	Seam sealing not required in Saratoga garments
Color	Navy blue. Other colors may be available by custom order.

Logistical Parameters

Ease of Use	Lightweight, comfortable with integral hood compatible with most masks. Low thermal burden and level of protection allow for extended wear time. Easy donning.
Consumables	None
Maintenance Requirements	General suit inspection. Standard laundering. Record wear use and laundering.
Shelf Life	10 yr
Transportability	Vacuum sealed, compact package
Operational Limitations	Durable. Long wear life. Passes chemical protection requirements after 24-h/45-d field test.
Environmental Conditions	No environmental usage limitations. Not effected by rain, fog, snow or salt water.
Unit Cost	\$250 per system

WORKING DRAFT

Maintenance Cost

None

Warranty

Free of material and workmanship defects for 1 yr

Don/Doff Information

Assistance is not required. Assistance in checking mask/hood interface is recommended.

Use/Reuse

Reusable and launderable. Dispose of contaminated suits in a safe and approved manner.

Launderability

Suit is launderable six times for hygienic purposes. Standard home laundering.

Accessories

Polyethylene storage bag. Instruction manual. Suit may be purchased as package with Saratoga gloves and socks.

Special Requirements**Training Requirements**

No special training required

Training Available

Training video available from manufacturer

Manuals Available

Instruction manual

Surveillance Testing Requirements

No testing required. Inspection for tears and damage required.

Support Equipment

Chemical warfare protective mask, gloves, and socks or overboots

Testing Information

Independent test data/certificate of compliance is available upon request

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD equipment in CB environment

WORKING DRAFT

General

Name

Saratoga Joint Service Lightweight Integrated Suit (JSLIST)

ID # 78



Technology

Permeable Saratoga carbon sphere sorptive technology. Two layer approach. The inner filter layer is composed of carbon spherical absorbers laminated between PBI/Aramid material (lightweight polyester material). The outer layer is composed of a cotton ripstop material treated for durability and liquid resistance.

Stock Number

8415-01-444-XXXX depending on size and color

Protection Type

Percutaneous

Equipment Category

Overgarment (OG), a universal, lightweight, two-piece, front-opening garment that can be worn as an overgarment or as a primary uniform over personal underwear

Availability

Fielded April 1997. Currently in production.

Current User(s)

Department of Defense—Joint Services
Marine Corps System Command
Quantico, VA 22134
POC: Mr. Doug Bryce
703-784-6675

Manufacturer

Tex-Shield, Inc.
5206 Morrowick Rd
Charlotte, NC 28226
POC: Nona Fahl
704-341-3681 (Tel)
704-341-3468 (Fax)

Manufacturer Type

Domestic and Foreign

Developer

Department of Defense—Joint Services
Marine Corps System Command
Quantico, VA 22134
Mr. Doug Bryce
703-784-6675 (Tel)

Source

Tex-Shield, Inc.

Certification

Department of Defense certification. Tex-shield is sole source for material for JSLIST overgarment. DoD certified material per PD97-04.

WORKING DRAFT

Operational Parameters

Chemical Warfare (CW) Agents Protected Against

All classes of chemical warfare agents when used as directed with chemical warfare protective mask, gloves, and overboots or socks

Biological Warfare (BW) Agents Protected Against

Protects against biological warfare agents when used as directed with appropriate mask, gloves, and overboots or socks

Toxic Industrial Materials (TIMs) Protected Against

Not tested

Duration of Protection

Qualified by the DoD to meet the requirements for protection from chemical warfare agents for up to six launderings, 45 d wear, 120 calendar days after removal from factory sealed bag or 24 h after contamination

Recommended Use(s)

Tactical, crisis management, all law enforcement, and first responders

Physical Parameters

Sizes Available

S/X-short, S/short, M/short, M/regular, M/long, L/regular, and L/long

Weight

Varies by size. Nominal weight < 5 lb suit

Package Size and Volume

Coat and trouser packaged separately. Nominal 10 in x 6 in x 3 in vacuum sealed package size for each piece.

Power Requirements

None

Material Type

Two layer fabric system with shell of 50/50 nylon/cotton. Carbon spherical absorbers located between PBI/Aramid material. Not FR.

Construction Type

Seam sealing not required in Saratoga garments

Color

Woodland or desert camouflage

Logistical Parameters

Ease of Use

Universal lightweight, two piece, front-opening garment can be worn as an overgarment or as a primary uniform over personal underwear. It has integral hood, bellows-type sockets, high-waist trousers, adjustable suspenders, adjustable waistband, and waist length jacket. Low thermal burden-less bulk; lightweight. Design improves system acceptance and maximizes compatibility and user individual equipment compatibility.

Consumables

None

Maintenance Requirements

General suit inspection. Standard laundering. Record wear use and laundering.

Shelf Life

10 yr

Transportability

Vacuum sealed, compact package

Operational Limitations

Durable overgarment. Long wear life. Passes chemical protection requirements after 24 h to 45 d field test. Low thermal burden and level of protection allow for extended wear time.

WORKING DRAFT

Environmental Conditions	No environmental usage limitations. Not effected by rain, fog, snow or salt water.
Unit Cost	\$250 per suit
Maintenance Cost	None
Warranty	Free of material and workmanship defects for 1 yr
Don/Doff Information	Assistance is not required. Assistance in checking mask/hood interface is recommended. Suspenders, drawstring cords, and Velcro closures for easy donning.
Use/Reuse	Reusable and launderable. Dispose of contaminated suits in a safe and approved manner.
Launderability	Suit is launderable six times for hygienic purposes. Standard home laundering.
Accessories	Polyethylene storage bag. Instruction manual. Suit may be purchased as package with Saratoga gloves and socks.
<u>Special Requirements</u>	
Training Requirements	No special training required
Training Available	DoD JSLIST training video available from manufacturer
Manuals Available	Instruction manual
Surveillance Testing Requirements	No testing required. Inspection for tears and damage required.
Support Equipment	Chemical warfare protective mask, gloves, and socks or overboots
Testing Information	Only DoD certified material per PD 97-04. Independent test data/certification of compliance is available upon request.
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD equipment in CB environment

WORKING DRAFT

General

Name

Trellechem® High Performance Suit (HPS) Level A

ID # 79



Technology

Trellechem® is the trade name of a range of chemical protective suits. Red Viton®/butyl rubber coated fabric on the outside and polymer barrier laminate on the inside. Gas and liquid tight fabric construction.

Stock Number

M: 477400177
L: 477400178
XL: 477400179
XXL: 477400180

Protection Type

Level A, Percutaneous

Equipment Category

Level A, chemical protective suit

Availability

Stocked item, off the shelf at the manufacturers U.S. distribution point

Current User(s)

Used by, e.g., fire and rescue services/HAZMAT teams, chemical industry, and the U.S. Army Chem Demil

Manufacturer

Trelleborg Industries
Ystad Sweden
Local Distribution:
call 800-344-4458 for nearest location

Manufacturer Type

Foreign

Developer

Trelleborg Industries
Ystad Sweden

Source

Trelleborg Viking, Inc.
170 West Road, Suite 1
Portsmouth, NH 03801
603-436-1236 (Tel)
800-344-4458 (Tel)
603-436-1392 (Fax)

Certification

NFPA 1991/2000 (USA), EN943 (European)

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Strong and durable, offers more than 8 h protection from a wide range of different chemicals including chemical warfare agents

WORKING DRAFT

Biological Warfare (BW) Agents Protected Against

All suits are vapor and liquid tight

Toxic Industrial Materials (TIMs) Protected Against

Material is protective against the 21 chemicals listed in ASTM F1001 and numerous other TIMs and 450 additional chemicals and gases. Carbon disulfide, chlorine, ethylene oxide, hydrogen chloride, sodium hydroxide, and sulfuric acid.

Duration of Protection

1 h to 8 h depending on the chemical or CW agent

Recommended Use(s)

All Level A, in Zone 1 and 2

Physical Parameters

Sizes Available

S, M, L, XL, and XXL

Weight

Approx. 17 lb

Package Size and Volume

30.5 in L x 23 in W x 8.5 in H

Power Requirements

Compressed air source for testing suits

Material Type

Viton[®]/butyl rubber coated fabric on outside and polymer barrier laminate on inside. Visor made of high impact 2 mm PVC. Inner gloves are made of multi-layer silver polymer laminate. Outer gloves made of chloroprene runner. Kevlar gloves (for mechanical protection) are worn over other gloves. Footwear—integrated booties in primary material. HAZMAT safety boots worn over booties.

Construction Type

Sewn and heat sealed; aramid thread

Color

Orange-Red

Logistical Parameters

Ease of Use

Designed by a tailor for comfort and fit

Consumables

Gloves

Maintenance Requirements

Pressure test every 6 mo, zipper lubrication, and cool storage

Shelf Life

10 yr

Transportability

Stored on board HAZMAT trucks, fire trucks and HAZMAT trailers

Operational Limitations

Duration of air source

Environmental Conditions

All. Suit ventilation systems available. Operational temperature range is -33 °F to 149 °F.

Unit Cost

\$4.5K

Maintenance Cost

Minimal testing time, cleaning time, patching as needed, glove replacement

Warranty

10 yr shelf life with 5 yr manufacturer defect warranty, with five free annual pressure test and inspections

WORKING DRAFT

Don/Doff Information

2 min 10 s for doffing

Use/Reuse

Reusable

Launderability

Yes, mild soap and water with brush or cloth; let air-dry. If stained, use white spirit followed with a rinse of lukewarm water and mild detergent, followed by a clear water rinse.

Accessories

Suit bags, hangers, gloves, test kits, repair kits, CDROM, and suit manual

Special Requirements**Training Requirements**

Donning and doffing, maintenance, testing, and repair

Training Available

CDROM trainer and on site factory reps

Manuals Available

CDROM and hard copy suit manual

Surveillance Testing Requirements

Inspect upon delivery, after each use and/or repair, or at least every 6 mo

Support Equipment

Test kits, repair kit, and compressed air equipment

Testing Information

Not specified

Applicable Regulations

ASTM F739 and NFPA 1991/2000

Health Hazards

Not applicable

Communications Interface Capability

Not applicable

EOD Compatibility

Yes, suits are used by various military units

WORKING DRAFT

General

Name

Trellchem® TLU (Limited Use) Level A

ID # 80



Technology

Trellchem® is the trade name of a range of chemical protective suits. Made with a polyamide fabric coated with barrier film lamination, the outside and inside layers offering protection against exposure to a wide range of chemicals. Gas and liquid tight fabric construction (limited use).

Stock Number

M: 475751001
L: 475751002
XL: 475751003
XXL: 47575004

Protection Type

Level A, Percutaneous, and limited use

Equipment Category

Level A, chemical protective suit

Availability

Stocked item, off the shelf at the manufacturers U.S. distribution point

Current User(s)

Used by, e.g., fire and rescue services/HAZMAT teams, chemical industry, and the U.S. Army

Manufacturer

Trelleborg Industries
Ystad Sweden
Local Distribution:
Call 800-344-4458 for nearest location

Manufacturer Type

Foreign

Developer

Trelleborg Industries
Ystad Sweden

Source

Trelleborg Viking, Inc.
170 West Road, Suite 1
Portsmouth, NH 03801
603-436-1236 (Tel)
800-344-4458 (Tel)
603-436-1392 (Fax)

Certification

NFPA 1991/2000 (USA), EN943 (European)

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Strong and durable, offers more than 8 h protection from a wide range of different chemicals including chemical warfare agents

WORKING DRAFT

Biological Warfare (BW) Agents Protected Against

All suits are vapor and liquid tight

Toxic Industrial Materials (TIMs) Protected Against

Carbon disulfide, chlorine, ethylene oxide, hydrogen chloride, sodium hydroxide, and sulfuric acid

Duration of Protection

1 h to 8 h depending on the chemical or CW agent

Recommended Use(s)

All Level A, in Zone 1 and 2

Physical Parameters

Sizes Available

S, M, L, XL, and XXL

Weight

Approx. 13 lb

Package Size and Volume

30.5 in L x 23 in W x 8.5 in H

Power Requirements

Compressed air source for testing suits

Material Type

Barrier film laminate on inside and outside, over fabric substrate. Inner gloves are made of multi-layer silver polymer laminate. Outer gloves made of chloroprene rubber. Kevlar gloves (for mechanical protection) are worn over other gloves. Footwear—integrated booties in primary material. HAZMAT safety boots worn over booties.

Construction Type

Sewn and heat sealed; aramid thread

Color

White

Logistical Parameters

Ease of Use

Designed by a tailor for comfort and fit

Consumables

Gloves

Maintenance Requirements

Pressure test every 6 mo, zipper lubrication, and cool storage

Shelf Life

5 yr

Transportability

Stored on board HAZMAT trucks, fire trucks and HAZMAT trailers

Operational Limitations

Duration of air source

Environmental Conditions

All, suit ventilation systems available. Operational temperature range is -33 °F to 149 °F.

Unit Cost

\$650—standard
\$1.35K with NFPA certified overcover

Maintenance Cost

Minimal testing time, cleaning time, patching as needed, and glove replacement

Warranty

1 y

Don/DoFF Information

2 min 10 s for doffing

Use/Reuse

Limited use one time exposure

WORKING DRAFT

Launderability

Yes, mild soap and water with brush or cloth; let air-dry. If stained, use white spirit followed with a rinse of lukewarm water and mild detergent, followed by a clear water rinse.

Accessories

Suit bags, hangers, gloves, test kits, repair kits, CDROM, and suit manual

Special Requirements**Training Requirements**

Donning and doffing, maintenance, testing, and repair

Training Available

CDROM trainer and on site factory reps

Manuals Available

CDROM and hard copy suit manual

Surveillance Testing Requirements

Inspect upon delivery, after each use and/or repair, or at least every 6 mo

Support Equipment

Test kits, repair kit, and compressed air equipment

Testing Information

Not specified

Applicable Regulations

ASTM F739 and NFPA 1991/2000

Health Hazards

Not applicable

Communications Interface Capability

Not applicable

EOD Compatibility

Yes, suits are used by various military units

WORKING DRAFT

General

Name

Trellech[®] Vapor Barrier Suit (VPI) Level A

ID # 81



Technology

Trellech[®] is the trade name of a range of chemical protective suits. Yellow chloroprene rubber coated fabric on outside and polymer barrier laminate on inside. Gas and liquid tight fabric construction.

Stock Number

M: 476400199
L: 476400200
XL: 476400201
XXL: 476400202

Protection Type

Level A, Percutaneous

Equipment Category

Level A, chemical protective suit

Availability

Stocked item, off the shelf at the manufacturers U.S. distribution point

Current User(s)

Used by, for example, fire and rescue services/HAZMAT teams, and chemical industry

Manufacturer

Trelleborg Industries
Ystad Sweden
Local Distribution:
Call 800-344-4458 for nearest location
Foreign

Manufacturer Type

Developer

Trelleborg Industries
Ystad Sweden

Source

Trelleborg Viking, Inc.
170 West Road, Suite 1
Portsmouth, NH 03801
603-436-1236 (Tel)
800-344-4458 (Tel)
603-436-1392 (Fax)

Certification

NFPA 1991/2000 (USA), EN943 (European)

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Strong and durable, offers more than 8 h protection from a wide range of different chemicals including chemical warfare agents

**Biological Warfare (BW)
Agents Protected Against**

All suits are vapor and liquid tight

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Material is protective against the 21 chemicals listed in ASTM F1001 and numerous other TIMs and 450 additional chemicals and gases. Carbon disulfide, chlorine, ethylene oxide, hydrogen chloride, sodium hydroxide, and sulfuric acid.

Duration of Protection

1 h to 8 h depending on the chemical or CW agent

Recommended Use(s)

All Level A, in Zone 1 and 2

Physical Parameters

Sizes Available

S, M, L, XL, and XXL

Weight

Approx. 15 lb

Package Size and Volume

30.5 in L x 23 in W x 8.5 in H

Power Requirements

Compressed air source for testing suits

Material Type

Chloroprene with fabric substrate barrier film on the inside. Inner gloves are made of multi-layer silver polymer laminate. Outer gloves made of chloroprene rubber. Kevlar gloves (for mechanical protection) are worn over other gloves. Footwear—integrated booties in primary material. HAZMAT safety boots worn over booties.

Construction Type

Sewn and heat sealed; aramid thread

Color

Yellow

Logistical Parameters

Ease of Use

Designed by a tailor for comfort and fit

Consumables

Gloves

Maintenance Requirements

Pressure test every 6 mo, zipper lubrication, and cool storage

Shelf Life

5 yr

Transportability

Stored on board HAZMAT trucks, fire trucks, and HAZMAT trailers

Operational Limitations

Duration of air source

Environmental Conditions

All, suit ventilation systems available. Operational temperature range is -33 °F to 149 °F.

Unit Cost

\$1.99K

Maintenance Cost

Minimal testing time, cleaning time, patching as needed, and glove replacement

Warranty

10 yr shelf life with 5 yr manufacturer defect warranty, free annual pressure test, and inspection for 3 yr

Don/Doff Information

2 min 10 s for doffing

Use/Reuse

Reusable

WORKING DRAFT

Launderability

Yes, mild soap and water with brush or cloth; let air-dry. If stained, use white spirit followed with a rinse of lukewarm water and mild detergent, followed by a clear water rinse.

Accessories

Suit bags, hangers, gloves, test kits, repair kits, CDROM, and suit manual

Special Requirements**Training Requirements**

Donning and doffing, maintenance, testing and repair

Training Available

CDROM trainer and on site factory reps

Manuals Available

CDROM and hard copy suit manual

Surveillance Testing Requirements

Inspect upon delivery, after each use and/or repair, or at least every 6 mo

Support Equipment

Test kits, repair kit, and compressed air equipment

Testing Information

Not specified

Applicable Regulations

ASTM F739 and NFPA 1991/2000

Health Hazards

Not applicable

Communications Interface Capability

Not applicable

EOD Compatibility

Yes, suits are used by various military units

WORKING DRAFT

General

Name

Trellechem® Vapor Barrier Suit (VPS) Level A

ID # 82



Technology

Trellechem® is the trade name of a range of chemical protective suits. Yellow chloroprene rubber coated fabric on outside and polymer barrier laminate on inside. Gas and liquid tight fabric construction.

Stock Number

M: 476400199
L: 476400200
XL: 476400201
XXL: 476400202

Protection Type

Level A, Percutaneous

Equipment Category

Level A, chemical protective suit

Availability

Stocked item, off the shelf at the manufacturers U.S. distribution point

Current User(s)

Used by, e.g., fire and rescue services/HAZMAT teams, and chemical industry

Manufacturer

Trelleborg Industries
Ystad Sweden
Local Distribution:
Call 800-344-4458 for nearest location

Manufacturer Type

Foreign

Developer

Trelleborg Industries
Ystad Sweden

Source

Trelleborg Viking, Inc.
170 West Road, Suite 1
Portsmouth, NH 03801
603-436-1236 (Tel)
800-344-4458 (Tel)
603-436-1392 (Fax)

Certification

NFPA 1991/2000 (USA), EN943 (European)

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Strong and durable, offers more than 8 h protection from a wide range of different chemicals including chemical warfare agents

**Biological Warfare (BW)
Agents Protected Against**

All suits are vapor and liquid tight

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Material is protective against the 21 chemicals listed in ASTM F1001 and numerous other TIMs and 450 additional chemicals and gases. Carbon disulfide, chlorine, ethylene oxide, hydrogen chloride, sodium hydroxide, and sulfuric acid.

Duration of Protection

1 h to 8 h depending on the chemical or CW agent

Recommended Use(s)

All Level A, in Zone 1 and 2

Physical Parameters

Sizes Available

S, M, L, XL, and XXL

Weight

Approximately 15 lb

Package Size and Volume

30.5 in L x 23 in W x 8.5 in H

Power Requirements

Compressed air source for testing suits

Material Type

Chloroprene with fabric substrate barrier film on the inside. Inner gloves are made of multi-layer silver polymer laminate. Outer gloves made of chloroprene rubber. Kevlar gloves (for mechanical protection) are worn over other gloves. Footwear—integrated booties in primary material. HAZMAT safety boots worn over booties.

Construction Type

Sewn and heat sealed; aramid thread

Color

Yellow

Logistical Parameters

Ease of Use

Designed by a tailor for comfort and fit

Consumables

Gloves

Maintenance Requirements

Pressure test every 6 mo, zipper lubrication, and cool storage

Shelf Life

5 yr

Transportability

Stored on board HAZMAT trucks, fire trucks, and HAZMAT trailers

Operational Limitations

Duration of air source

Environmental Conditions

All, suit ventilation systems available. Operational temperature range is -33 °F to 149 °F.

Unit Cost

\$3.2K

Maintenance Cost

Minimal testing time, cleaning time, patching as needed, and glove replacement

Warranty

10 yr shelf life with 5 yr manufacturer defect warranty

Don/Doff Information

2 min 10 s for doffing

Use/Reuse

Reusable

WORKING DRAFT

Launderability

Yes, mild soap and water with brush or cloth; let air-dry. If stained, use white spirit followed with a rinse of lukewarm water and mild detergent, followed by a clear water rinse.

Accessories

Suit bags, hangers, gloves, test kits, repair kits, CDROM, and suit manual

Special Requirements**Training Requirements**

Donning and doffing, maintenance, testing, and repair

Training Available

CDROM trainer and on site factory reps

Manuals Available

CDROM and hard copy suit manual

Surveillance Testing Requirements

Inspect upon delivery, after each use and/or repair, or at least every 6 mo

Support Equipment

Test kits, repair kit, and compressed air equipment

Testing Information

Not specified

Applicable Regulations

ASTM F739 and NFPA 1991/2000

Health Hazards

Not applicable

Communications Interface Capability

Not applicable

EOD Compatibility

Yes, suits are used by various military units

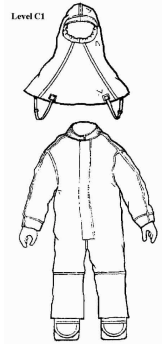
WORKING DRAFT

General

Name

Disposable Toxicological Agent Protective Suit (DTAPS)/Level C1

ID # 83



Technology

Level C (Field) Suit—DuPont Barricade, an impermeable nonwoven multi-laminate material

Stock Number

GEOMET P/N 38279 (for field use)

Protection Type

Level C, Percutaneous, and respiratory

Equipment Category

Level C1 toxicological agent protective suit, disposable (field use)

Availability

June 1, 2001

Current User(s)

Not applicable

Manufacturer

GEOMET Technologies, Inc.
20251 Century Blvd., Suite 300
Germantown, MD 20874
POC: Jef Harris
301-428-9898 (Tel)
301-428-9482 (Fax)

Manufacturer Type

Domestic

Developer

GEOMET Technologies, Inc., Germantown, MD, under contract with the Office of Special Technology

Source

www.nbcprotect.com

Certification

Projected to be certified under NFPA 1994

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Material swatches tested against GA, GB, GD, GF, t-HD, HN, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Material is protective against bacteria, protozoans, rickettsia, toxins, and viruses. Biopenetration resistance testing in accordance with ASTM F 1671, Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Blood-Borne Pathogens Using Phi-X174 Bacteriophage Penetration as a Test System.

Toxic Industrial Materials (TIMs) Protected Against

Material is protective against the 21 chemicals listed in ASTM F 1001 and numerous other TIMs. For specific chemicals, refer to DuPont's Permeation Guide for Tychem Fabrics and the DuPont Tyvek Fax-on-Demand Data Service (800-558-9329).

WORKING DRAFT

Duration of Protection

Over 8 h for most chemicals

Recommended Use(s)

Military, Federal, State and local first responders to CB incidents in non-IDLH situations. The Level C1 ensemble is targeted for field use by users such as EMS, police, fire department, and forensic personnel.

Physical Parameters**Sizes Available**

S, M, L, XL, XXL, and XXXL

Weight

Approximately 4 lb 8 oz for size small up to 5 lb for size XXXL

Package Size and Volume

From 20 in x 20 in x 6 in (1.39 ft³) for size small to 25 in x 20 in x 8 in (to 2.31 ft³) for size XXXL

Power Requirements

4 cfm PAPR blower requires lithium battery pack. Optional cooling system requires three size D alkaline batteries which will last up to 4 h.

Material Type

3 mil Tychem LV an impermeable nonwoven multi-laminant material

Construction Type

Sewn and seams heat sealed with overtape

Color

Olive drab green

Logistical Parameters**Ease of Use**

Level C1 DTAP suit features fully integrated sub-systems. Suit presents minimal restrictions on mobility and flexibility.

Consumables

4 cfm PAPR blower requires two filter canisters. Lithium battery pack can be stored for up to 10 yr. If using optional cooling system, three size D alkaline batteries and ice are consumable items.

Maintenance Requirements

None

Shelf Life

5 yr— store at room temperature

Transportability

Suit will be sealed in a plastic bag

Operational Limitations

Minimal. Operations can be extended with the optional cooling system to manage heat stress.

Environmental Conditions

The equipment is designed to operate under all common environmental conditions and climates

Unit Cost

\$122 to \$137 (suit); PAPR splash hood \$96; 4 cfm PAPR \$487 (includes face mask, hose, battery pack, mounting belt, and two filter canisters)

Maintenance Cost

None

Warranty

1 yr (parts and labor)

Don/Doff Information

“Buddy” required for donning. System can be doffed by the user.

Use/Reuse

Level C1 suit is disposable. However, if not contaminated during emergency operations, suit can be downgraded for use as a training suit. Suits must be disposed after any liquid or vapor chemical exposure. PAPR splash hood can be reused until torn or worn through.

WORKING DRAFT

Launderability

Hand wash with mild detergent and biocide after each training use; suit can be laundered and reused as a training suit only

Accessories

16 mil butyl gloves, integral booties, 4 cfm blower, facemask, PAPR splash hood. Cooling system is available as an option.

Special Requirements

Training Requirements

2 h for operation

Training Available

Yes

Manuals Available

Commercial operating manuals

Surveillance Testing Requirements

None

Support Equipment

Chemical protective boots. Cooling system is available as an option, which requires ice or a freezer to freeze ice bottles.

Testing Information

U.S. Army methyl salicylate (MeS) man-in-simulant test (MIST, TOP 10-2-022); passed ASTM Spray Test (ASTM F 1359-97); ASTM D 751 = 35 lbf; ASTM D 2582 = 7 lbf; ASTM D 747 = 0.50 in-lbf

Applicable Regulations

29 CFR 1910.120

Health Hazards

All materials are considered nonhazardous. MSDS on Tychem LV material available upon request. Contaminated suits should be treated as hazardous waste and must be disposed of in accordance with established procedures, regulations, and laws. Contaminated garments should be landfilled, but can be incinerated.

Communications Interface Capability

Facemask has integral speaking diaphragm

EOD Compatibility

Not to be used with fused munitions or in explosive or flammable atmospheres

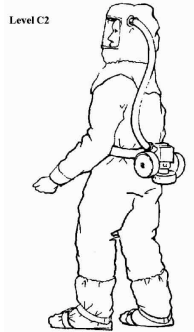
WORKING DRAFT

General

Name

Disposable Toxicological Agent Protective Suit (DTAPS)/Level C2

ID # 84



Technology

Level C (Hospital) Suit— DuPont Tychem SL impermeable material.
Level C Air Supplied Hood— DuPont Tychem SL impermeable material

Stock Number

GEOMET P/N 38280 (for hospital use)

Protection Type

Level C, Percutaneous, and respiratory

Equipment Category

Level C2 toxicological agent protective suit, disposable (for hospital use)

Availability

June 1, 2001

Current User(s)

Not applicable

Manufacturer

GEOMET Technologies, Inc.
20251 Century Blvd., Suite 300
Germantown, MD 20874
POC: Jef Harris
301-428-9898 (Tel)
301-428-9482 (Fax)

Manufacturer Type

Domestic

Developer

GEOMET Technologies, Inc., Germantown, MD, under contract with
the Office of Special Technology

Source

www.nbcprotect.com

Certification

Projected to be certified under NFPA 1994

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Material swatches tested against GB, t-HD, L, and VX

**Biological Warfare (BW)
Agents Protected Against**

Material is protective against bacteria, protozoans, rickettsia, toxins, and viruses. Biopenetration resistance testing in accordance with ASTM F 1671, Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Blood-Borne Pathogens Using Phi-X174 Bacteriophage Penetration as a Test System.

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

For specific chemicals, refer to DuPont's Permeation Guide for Tychem Fabrics and the DuPont Tyvek Fax-on-Demand Data Service at 800-558-9329

Duration of Protection

Over 8 h for many chemicals

Recommended Use(s)

The Level C2 DTAPS is designed primarily for indoor use for operations such as patient decontamination and medical treatment. The ensemble is targeted for use by doctors, nurses, and forensics personnel in a hospital-type setting.

Physical Parameters

Sizes Available

S, M, L, XL, XXL, and XXXL

Weight

Approximately 1 lb 9 oz for size small to 2 lb for size XXXL (suit only). 6 cfm PAPR, including hood, batteries, hose, and three canisters is 5 lb 11 oz.

Package Size and Volume

From 24 in x 16 in x 10 in (2.2 ft³) for size small to 29 in x 16 in x 10 in (to 2.7 ft³) for size XXXL (complete ensemble)

Power Requirements

6 cfm PAPR blower requires six size D alkaline batteries. Optional cooling system requires three size D alkaline batteries, which will last up to 4 h.

Material Type

Tychem SL, an impermeable nonwoven multi-laminant material

Construction Type

Sewn and seams heat sealed with overtape

Color

White

Logistical Parameters

Ease of Use

This suit features fully integrated sub-systems. Suit presents minimal restrictions on mobility and flexibility.

Consumables

6 cfm PAPR blower requires six size D alkaline batteries and three filter canisters. If using optional cooling system, three size D alkaline batteries and ice are consumable items.

Maintenance Requirements

None

Shelf Life

5 yr—store at room temperature

Transportability

Suit will be sealed in a plastic bag

Operational Limitations

Minimal. Operations can be extended with the optional cooling system to manage heat stress.

Environmental Conditions

The ensemble is designed to operate under all common indoor environmental conditions

Unit Cost

\$73 to \$81 (suit); overboots \$13.50; 6 cfm PAPR \$418 (includes air-supplied hood, hose, batteries, mounting belt, and three filter canisters)

Maintenance Cost

None

Warranty

1 yr (parts and labor)

WORKING DRAFT

Don/Doff Information	System can be donned and doffed by the user
Use/Reuse	Level C2 suit should be disposed after any use. Suits MUST be disposed after any liquid or vapor chemical exposure.
Launderability	Not launderable; suit should be disposed after use
Accessories	System comes with 16 mil butyl gloves, 6 cfm PAPR blower, air-supplied hood, and latex overboots
<u>Special Requirements</u>	
Training Requirements	2 h for operation
Training Available	Yes
Manuals Available	Commercial operating manuals
Surveillance Testing Requirements	None
Support Equipment	Cooling system is available as an option, which requires ice or a freezer to freeze ice bottles
Testing Information	U.S. Army methyl salicylate (MeS) man-in-simulant test (MIST, TOP 10-2-022); passed ASTM Spray Test (ASTM F 1359-97); ASTM D 751 = 35 lbf; ASTM D 2582 = 7 lbf; ASTM D 747 = 0.50 lbf·in
Applicable Regulations	29 CFR 1910.120
Health Hazards	All materials are considered nonhazardous. MSDS on Tychem SL material available upon request. Contaminated suits should be treated as hazardous waste and must be decontaminated and disposed of in accordance with established procedures, regulations, and laws. Contaminated garments should be landfilled, but can be incinerated.
Communications Interface Capability	Level C2 DTAPS is compatible with various commercial radio systems, such as a boom microphone radio system
EOD Compatibility	Not to be used with fused munitions or in explosive or flammable atmospheres

WORKING DRAFT

General

Name

Demilitarization Protective Ensembles (DPEs)

ID # 85

Picture Not Available

Technology

Each suit contains an infrared communication window as well as backflow protection valve and high-visibility hood

Stock Number

Not specified

Protection Type

Percutaneous and respiratory

Equipment Category

Ensemble. Each suit contains an infrared communication window as well as backflow protection valve and high-visibility hood.

Availability

Not specified

Current User(s)

Not specified

Manufacturer

Vinyl Technology, Inc.
200-T Railroad Ave
Monrovia, CA 91016-4643
626-443-5257 (Tel)
626-443-0531 (Fax)

Manufacturer Type

Not specified

Developer

Rockwell International

Source

Internet: Vinyl Technology, Inc.

Certification

Not specified

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not specified

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Not specified

Duration of Protection

Not specified

Recommended Use(s)

Chemical Weapons Disposal Program

Physical Parameters

Sizes Available

Not specified

Weight

Not specified

Package Size and Volume

Not specified

WORKING DRAFT

Power Requirements Not specified

Material Type Not specified

Construction Type Not specified

Color Not specified

Logistical Parameters

Ease of Use Not specified

Consumables Not specified

Maintenance Requirements Not specified

Shelf Life Not specified

Transportability Not specified

Operational Limitations Not specified

Environmental Conditions Not specified

Unit Cost Not specified

Maintenance Cost Not specified

Warranty Not specified

Don/Doff Information Not specified

Use/Reuse Not specified

Launderability Not specified

Accessories Not specified

Special Requirements

Training Requirements Not specified

Training Available Not specified

Manuals Available Not specified

Surveillance Testing Requirements Not specified

Support Equipment Backflow protection valve and high-visibility hood

Testing Information Not specified

Applicable Regulations Not specified

Health Hazards Not specified

WORKING DRAFT

**Communications Interface
Capability**

Infrared communication window

EOD Compatibility

Not specified

WORKING DRAFT

General

Name

“Hot” Operation: Air-Fed Garments

ID # 86

Picture Not Available

Technology

A variety of molded parts and sub assemblies

Stock Number

Not specified

Protection Type

Percutaneous and respiratory—radioactive contamination protection

Equipment Category

Ensemble

Availability

Not specified

Current User(s)

Department of Energy

Manufacturer

Vinyl Technology, Inc.
200-T Railroad Ave
Monrovia, CA 91016-4643
626-443-5257 (Tel)
626-443-0531 (Fax)

Manufacturer Type

Developer

Rockwell International

Source

Internet: Vinyl Technology, Inc.

Certification

Not specified

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not specified

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Not specified

Duration of Protection

Not specified

Recommended Use(s)

Not specified

Physical Parameters

Sizes Available

Not specified

Weight

Not specified

Package Size and Volume

Not specified

Power Requirements

Not applicable

Material Type

Not specified

Construction Type

Not specified

WORKING DRAFT

Color

Not specified

Logistical Parameters

Ease of Use

Not specified

Consumables

Not specified

Maintenance Requirements

Not specified

Shelf Life

Not specified

Transportability

Not specified

Operational Limitations

Not specified

Environmental Conditions

Not specified

Unit Cost

Not specified

Maintenance Cost

Not specified

Warranty

Not specified

Don/Doff Information

Not specified

Use/Reuse

Not specified

Launderability

Not specified

Accessories

Not specified

Special Requirements

Training Requirements

Not specified

Training Available

Not specified

Manuals Available

Not specified

**Surveillance Testing
Requirements**

Not specified

Support Equipment

Not specified

Testing Information

Not specified

Applicable Regulations

Not specified

Health Hazards

Not specified

**Communications Interface
Capability**

Not specified

EOD Compatibility

Not specified

WORKING DRAFT

General Name

CCA_DuPont Tyvek® F Coverall

ID # 87



Technology

Percutaneous - barrier fabric
TYVEK® "F" is manufactured by laminating the basic TYVEK® flash-spunbonded polyethylene material to a barrier film which is coated with a polymer. The top polymer layer allows seams to be made with a heat-sealing tape which includes the same barrier film and polymer as TYVEK® "F." Known chemical warfare agents will not permeate these seams.

Stock Number

TF – size

Protection Type

Percutaneous

Equipment Category

Coverall, designed to protect workers from hazardous materials or sensitive products and processes from contamination by people

Availability

Commercially available

Current User(s)

FBI, Secret Service, NYC Police, White House Military, and the U.S. Army TEC Escort

Manufacturer

CCA, Manchester, England
DuPont Europe and CCA
DuPont Protective Apparel

Manufacturer Type

Foreign

Developer

DuPont Europe

Source

DuPont Europe and CCA
DuPont Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)
www.protectivesuits.com

Certification

CE certification

Operational Parameters

Chemical Warfare (CW) Agents Protected Against

HD, L, and GB

Biological Warfare (BW) Agents Protected Against

Anthrax, Toxins

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

There are over 50 industrial chemicals that Tyvek F protects against. A full list can be supplied if needed.

Duration of Protection

Different agents will result in different breakthrough times

Recommended Use(s)

Not specified

Physical Parameters

Sizes Available

Small to XXXL

Weight

8 oz

Package Size and Volume

Vacuum packed. Dimensions of the packed suit are 6 in x 8 in x 1/2 in.

Power Requirements

Not applicable

Material Type

TYVEK® “F” is manufactured by laminating the basic TYVEK® flash-spunbonded polyethylene material to a barrier film which is coated with a polymer. The top polymer layer allows seams to be made with a heat-sealing tape which includes the same barrier film and polymer as Tyvek® “F.” Known chemical warfare agents will not permeate these seams.

Construction Type

All seams are stitched then tape welded. Specified seam construction ensures seam strength, durability and integrity of the coverall. Garment design, seams, and closures adapted to barrier requirements. Carries the CE mark for chemical protective clothing, which is category III PPE.

Color

Grey and green

Logistical Parameters

Ease of Use

Wearer has plenty of movement room and the suit is extremely light weight

Consumables

Not applicable

Maintenance Requirements

None needed, except for proper storage

Shelf Life

Shelf Life: 10 yr when adequately packed

Transportability

Suit is vacuum packed and is very easily packed for mass suit transport

Operational Limitations

Like all protective clothing, care must be taken around sharp objects and rough areas. Suit will hold up with normal operational use. Suits will work under different environmental conditions (i.e., rain, snow, and sleet).

Environmental Conditions

Not applicable

Unit Cost

\$33 to \$39/unit

Maintenance Cost

None

Warranty

Shelf like guarantee of 8 yr

Don/Doff Information

No assistance required for donning and doffing

Use/Reuse

Yes

WORKING DRAFT

Launderability Not applicable

Accessories None

Special Requirements

Training Requirements About 1 min

Training Available Yes

Manuals Available Not applicable

Surveillance Testing Requirements Inspection for holes and proper storage environment

Support Equipment None

Testing Information DuPont Europe has done testing. Aberdeen Proving Ground is continually testing the suit.

Chemical Warfare Agent Protection:
TYVEK® "F" provides an exceptionally high level of protection for very long periods against all known chemical warfare agents. TYVEK® "F" has been tested and certified by the prestigious TNO Laboratories in the Netherlands having passed all the standard NATO tests for chemical warfare protection. In addition, chemical warfare testing facilities have satisfactorily subjected TYVEK® "F" to their own national test standards.

Biological Warfare Agent Protection:
Military TYVEK® "F" provides a total barrier against biological warfare agents. A protective suit made from TYVEK® "F" to keep out chemical warfare agents will also provide barrier protection against biological warfare agents. DuPont Europe has done testing. Aberdeen Proving Ground is continually testing the suit.

Applicable Regulations None

Health Hazards None

Communications Interface Capability Not specified

EOD Compatibility Not specified

WORKING DRAFT

General

Name

Tychem® 10000 Coverall

ID # 88



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100120

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front coverall

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel fax-on-demand service at 800–558–9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800–558–9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

6 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$159/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

WORKING DRAFT

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability

Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories

None

Special Requirements

Training Requirements

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

Permeation Guide available

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 9.5 oz/yd²

Thickness (ASTM D1777–64) 29 mils

Mullen burst (ASTM D3786–87) 204 psi

Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb

Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb

Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General

Name

Tychem® 10000 Coverall

ID # 89



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100122

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, hood, boot, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$185/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

WORKING DRAFT

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability

Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories

None

Special Requirements

Training Requirements

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

Permeation Guide available

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 9.5 oz/yd²

Thickness (ASTM D1777–64) 29 mils

Mullen burst (ASTM D3786–87) 204 psi

Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb

Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb

Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General

Name

Tychem® 10000 Coverall

ID # 90



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100124

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, respirator fit hood, boots, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW)

Agents Protected Against

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW)

Agents Protected Against

Not specified

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$212/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

WORKING DRAFT

Use/Reuse

Discard after use. Decontamination specific to chemical exposure.
Disposal per jurisdictional regulations.

Launderability

Not applicable. Not intended for reuse after exposure to toxic chemicals.
Dirt and dust can be manually removed with soap and water.

Accessories

None

Special Requirements**Training Requirements**

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

Permeation Guide available

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 9.5 oz/yd²

Thickness (ASTM D1777–64) 29 mils

Mullen burst (ASTM D3786–87) 204 psi

Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3)
197/178 lb

Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb

Permeation data available by calling 1–877–797–5907 or go to
www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General

Name

Tychem® 10000 Coverall

ID # 91



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

**Biological Warfare (BW)
Agents Protected Against**

Not specified

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$165/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

WORKING DRAFT

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability

Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories

None

Special Requirements

Training Requirements

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

Permeation Guide available

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 9.5 oz/ yd²

Thickness (ASTM D1777–64) 29 mils

Mullen burst (ASTM D3786–87) 204 psi

Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb

Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb

Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General Name

Tychem® 10000 Coverall

ID # 92



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100127

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, hood, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW) Agents Protected Against

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against

Not specified

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time
GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

6 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$175/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

WORKING DRAFT

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability

Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories

None

Special Requirements

Training Requirements

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

Permeation Guide available

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 9.5 oz/yd²

Thickness (ASTM D1777–64) 29 mils

Mullen burst (ASTM D3786–87) 204 psi

Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb

Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb

Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General Name

Tychem® 10000 Coverall

ID # 93



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics. Pictured is stock # 100256.

Stock Number

100187

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, hood, expanded back, sock boots with flaps, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW) Agents Protected Against

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against

Not specified

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$245/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

WORKING DRAFT

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability

Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories

None

Special Requirements

Training Requirements

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

Permeation Guide available

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 9.5 oz/yd²

Thickness (ASTM D1777–64) 29 mils

Mullen burst (ASTM D3786–87) 204 psi

Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb

Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb

Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General Name

Tychem® 10000 Coverall

ID # 94



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

100256

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, hood, sock boots, with flap, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW) Agents Protected Against

Nerve agents (GA, GB, GD, and VX); blister agents (HD and L). For specific test results, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request Document 595.

Biological Warfare (BW) Agents Protected Against

Not specified

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Excellent protection against a wide variety of TIMs. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

Fabric test data: Average breakthrough time GA, GB, GD, HD, L, and VX: Greater than 12 h at 100 g/m² (total coverage). For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 641, or go to www.dupont.com/tyvek/protective-apparel.

Recommended Use(s)

Emergency response, crisis management, remediation, secondary decon in hospital or emergency area, and warm zone decon

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 2 units/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Thermo Bond seam—sewn and taped. This exceptionally strong and chemical resistant seam construction provides a reliable barrier against heavy liquid splashes and rigorous seam stress.

Color

High-visibility lime yellow

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$209/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

WORKING DRAFT

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations.

Launderability

Not applicable. Not intended for reuse after exposure to toxic chemicals. Dirt and dust can be manually removed with soap and water.

Accessories

None

Special Requirements

Training Requirements

No special training required.

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

Permeation Guide available

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 9.5 oz/yd²

Thickness (ASTM D1777–64) 29 mils

Mullen burst (ASTM D3786–87) 204 psi

Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 197/178 lb

Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 36/50 lb

Permeation data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General

Name

Tyvek® Coverall

ID # 95



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14120

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-84-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

WORKING DRAFT

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel. No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 25 units/ctn

Package Size and Volume

10 in W x 14 7/8 in L x 10 in L

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$106/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.

Launderability

Not applicable. Not intended for reuse after exposure to hazardous materials.

WORKING DRAFT

Accessories

None

Special Requirements

Training Requirements

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

None required

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 1.2 oz/yd²

Thickness (ASTM D1777–64) 5.3 mils

Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6

Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1

Tongue tear, lb (ASTM D2261 (MD/CD)

Barrier data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General

Name

Tyvek® Coverall

ID # 96



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14125

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

WORKING DRAFT

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel. No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 25 units/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$122/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.

Launderability

Not applicable. Not intended for reuse after exposure to hazardous materials.

Accessories

None

WORKING DRAFT

Special Requirements

Training Requirements	No special training required
Training Available	Yes. DuPont will provide specialized group training upon request.
Manuals Available	Permeation Guide available
Surveillance Testing Requirements	Visual inspection (for holes and tears) prior to use
Support Equipment	Appropriate respiratory, foot, eye/face, hand, and head protection
Testing Information	Physical properties: Basis weight (ASTM D3776–85) 1.2 oz/yd ² Thickness (ASTM D1777–64) 5.3 mils Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6 Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1 Tongue tear, lb (ASTM D2261 (MD/CD) Barrier data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel
Applicable Regulations	None
Health Hazards	None
Communications Interface Capability	Not applicable
EOD Compatibility	Compatible with EOD suit

WORKING DRAFT

General

Name

Tyvek® Coverall

ID # 97



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14126

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front with hood

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

WORKING DRAFT

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel. No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters**Sizes Available**

S through XXXXL. Additional sizes available upon request.

Weight

7 lb/ctn and 25 units/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters**Ease of Use**

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$132/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.

Launderability

Not applicable. Not intended for reuse after exposure to hazardous materials.

WORKING DRAFT

Accessories

None

Special Requirements

Training Requirements

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

None required

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 1.2 oz/yd²

Thickness (ASTM D1777–64) 5.3 mils

Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6

Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1

Tongue tear, lb (ASTM D2261 (MD/CD)

Barrier data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General

Name

Tyvek® Coverall

ID # 98



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14127

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front with hood, elastic wrist, and ankles

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against**

Not specified

**Toxic Industrial Materials
(TIMs) Protected Against**

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

WORKING DRAFT

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel. No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

8 lb/ctn and 25 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$131/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.

Launderability

Not applicable. Not intended for reuse after exposure to hazardous materials.

WORKING DRAFT

Accessories

None

Special Requirements

Training Requirements

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

None required

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 1.2 oz/yd²

Thickness (ASTM D1777–64) 5.3 mils

Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6

Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1

Tongue tear, lb (ASTM D2261 (MD/CD)

Barrier data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General

Name

Tyvek® Coverall

ID # 99



Technology

High density spunbonded polyethylene coated with polyethylene film

Stock Number

14261

Protection Type

Percutaneous

Equipment Category

Coverall; zipper-front with hood, skid resistant boots, and elastic wrist

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

**Chemical Warfare (CW)
Agents Protected Against**

Not applicable

**Biological Warfare (BW)
Agents Protected Against
Toxic Industrial Materials
(TIMs) Protected Against**

Not specified

Hazardous dry particulates. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel.

WORKING DRAFT

Duration of Protection

For specific test data on hazardous dry particulates, call the DuPont Protective Apparel fax-on-demand service at 800-558-9329 and request document 610, or go to www.dupont.com/tyvek/protective-apparel. No test data for CW agents.

Recommended Use(s)

Crisis management (post decon); remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

9 lb/ctn and 25 unit/ctn

Package Size and Volume

14 7/8 in L x 10 1/2 in W x 10 in H

Power Requirements

Not applicable

Material Type

High density spunbonded polyethylene coated with polyethylene film

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

White

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user. Compatible with all commercial cooling systems.

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$134/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

Use/Reuse

Discard after use. Decontamination specific to chemical exposure. Disposal per jurisdictional regulations. Can be incinerated provided garment is not contaminated with hazardous or toxic materials.

WORKING DRAFT

Launderability

Not applicable. Not intended for reuse after exposure to hazardous materials.

Accessories

None

Special Requirements**Training Requirements**

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request

Manuals Available

None required

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 1.2 oz/yd²

Thickness (ASTM D1777–64) 5.3 mils

Strip tensile (in-lb) (ASTM D1682)(MD/CD) 7.9/7.6

Work to break (in-lb) (ASTM D1682) (MD/CD) 2.4/2.1

Tongue tear, lb (ASTM D2261 (MD/CD)

Barrier data available by calling 1–877–797–5907 or go to www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit

WORKING DRAFT

General

Name

Tychem® QC Coverall

ID # 100



Technology

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Stock Number

35120

Protection Type

Percutaneous

Equipment Category

Coverall; zipper front

Availability

Commercially available

Current User(s)

U.S. government/military, local government/fire department, emergency response teams, general industry, remediation companies, and chemical manufacturing. Specific organizations currently using item available upon request.

Manufacturer

DuPont Tyvek® Protective Apparel
U.S. Highway #1 North
McBee, SC 29101
800-845-6962 (Tel)
843-335-8599 (Fax)
e-mail: tyvekinf@usa.dupont.com

Manufacturer Type

Domestic manufacturer

Developer

DuPont Protective Apparel

Source

DuPont Tyvek® Protective Apparel
e-mail: Mary-Ann.Daniel@usa.dupont.com
POC: M. A. Daniel
888-577-6960 (Tel)

Certification

Not applicable

Operational Parameters

Chemical Warfare (CW)
Agents Protected Against

Not tested

Biological Warfare (BW)
Agents Protected Against

Not specified

WORKING DRAFT

Toxic Industrial Materials (TIMs) Protected Against

Many inorganic acids, bases, and other liquid chemicals such as pesticides. For specific test data, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel.

Duration of Protection

For specific test data on TIMs, call the DuPont Protective Apparel Fax-on-Demand Service at 800-558-9329 and request document 616, or go to www.dupont.com/tyvek/protective-apparel. No test data available for CW agents.

Recommended Use(s)

Crisis management (post decon); medical triage; remediation

Physical Parameters

Sizes Available

S through XXXXL. Additional sizes available upon request.

Weight

6 lb/ctn and 12 unit/ctn

Package Size and Volume

16 in L x 10 1/4 in W x 14 1/8 in H

Power Requirements

Not applicable

Material Type

Selectively impermeable composite consisting of thermoplastic barrier films laminated to high strength thermoplastic nonwoven fabrics

Construction Type

Sewn seam—overedge serged seam construction offers protection against many dry particulates and light sprays

Color

Yellow and Grey

Logistical Parameters

Ease of Use

Ergonomically designed for maximum mobility and flexibility

Consumables

None

Maintenance Requirements

Visual inspection prior to use

Shelf Life

Store in a cool, dry environment in original packaging. Manufacturer recommends designating “for training use only” after 5 yr of storage.

Transportability

Easily transported

Operational Limitations

Directly relates to the physical condition of user

Environmental Conditions

Can be used in all common outdoor weather conditions and climates. Rain, snow, extreme temperatures and humidity will have no effect on the suit.

Unit Cost

\$77/carton

Maintenance Cost

Minimum labor cost for routine suit inspection

Warranty

90 d for workmanship and materials

Don/Doff Information

No assistance required for donning and doffing. Average donning and doffing time is minimal.

WORKING DRAFT

Use/Reuse

Discard after use. Decontamination specific to chemical exposure.
Disposal per jurisdictional regulations.

Launderability

Not applicable. Not intended for reuse after exposure to toxic chemicals.
Dirt and dust can be manually removed with soap and water.

Accessories

None

Special Requirements**Training Requirements**

No special training required

Training Available

Yes. DuPont will provide specialized group training upon request.

Manuals Available

Permeation Guide available

Surveillance Testing Requirements

Visual inspection (for holes and tears) prior to use

Support Equipment

Appropriate respiratory, foot, eye/face, hand, and head protection

Testing Information

Physical properties:

Basis weight (ASTM D3776–85) 2.1 oz/yd²

Thickness (ASTM D1777–64) 6.0 mils

Mullen burst (ASTM D3786–87) 66 psi

Breaking strength—Grab (md/xd) (ASTM D1682–64, sec. 5.3) 25/35 lb

Tearing strength—Trapezoid (md/xd) (ASTM D1117–80) 7/5 lb

Permeation data available by calling 1–877–797–5907 or go to

www.dupont.com/tyvek/protective-apparel

Applicable Regulations

None

Health Hazards

None

Communications Interface Capability

Not applicable

EOD Compatibility

Compatible with EOD suit